

CAMBODIA

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Tuberculosis in Cambodia: An Assessment of Knowledge, Attitudes, and Practices in Kep

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Background

Tuberculosis (TB) is a worldwide health problem, and Cambodia is among the countries at the centre of this problem. One of the twenty-three countries in the world considered to have a high burden of TB comprising 80% of the global burden, the incidence of TB in Cambodia was estimated at 540 per 100,000 inhabitants in July 2001. This was one of the highest rates in Southeast Asia. The smear-positive, pulmonary (and most transmissible) case comprises nearly half of these cases. The health problem is made more serious by demographic changes, adverse socio-economic trends (e.g. low GDP, poverty), and a concomitant HIV epidemic.

The Royal Government of Cambodia recognizes TB as a health problem on the highest level – since 1980, the National TB Control Program (NTP) has searched for answers and in 1994, adopted the World Health Organization (WHO)-recommended Directly Observed Treatment Short-course (DOTS) protocol due to its cost-effectiveness and potential 85% cure rate. While the cure rates for TB greatly improved due to the implementation of DOTS in 1994 (from 69% to over 85%), the case detection rate for TB has remained relatively low at around 30%, with a smear-positive detection rate of about 50%.

In November 2001, the Ministry of Health (MOH) Department of Human Resources released specific treatment guidelines for TB in the Minimum Package of Activities (MPA, for health centres) and Complementary Package of Activities (CPA, for referral hospitals). Thus, the lingering TB problem in Cambodia has not been one of lack of existence of TB policy – it has either been a problem of efficacy, dissemination, and implementation of such policy. In the National Health Strategic Plan for Tuberculosis Control 2001-2005 published in November 2001, the major issues addressed in addition to low detection rates were (i) limited capacity of staff at all levels, especially in planning, management, and implementation of DOTS; (ii) the problem of low staff motivation due in particular to poor salaries; (iii) financial resources and issues related to irregularity of funding release; (iv) delay of detection of TB cases; (v) the impact of HIV/AIDS; and (vi) the issue of ensuring service free of charge.

Objectives

This goal of this study was to assess the perception of TB as a primary health care issue in patients and health care workers (HCWs) in Kep, a municipality near Kampot province in southern Cambodia. The issue was approached in terms of the subjects' knowledge, attitudes, and practices. Measuring basic knowledge of TB as a disease helped us gauge (i) the initiative of the patient to seek out relevant information about TB, (ii) the amount knowledge transfer from the HCW to the patient, (iii) the amount of knowledge transfer from public health education initiatives to the patient, and (iv) the amount of knowledge transfer from health care education to the HCW. Discovering the patient's and HCW's attitudes toward this knowledge allowed us to gauge (i) the relevance of this knowledge and (ii) the capacity of patients and HCWs to retain this knowledge. Lastly, assessing the practices related to these attitudes allowed us to figure out the health-seeking and health care-providing behaviours that exist in reality as a product of the attitudes and knowledge.

Methods

Individual interviews. Individual interviews were conducted with HCWs and TB patients. HCWs from both the Kep Referral Hospital and the Ang Koul Health Centre were chosen regardless of their occupation within health care. The health centre in Ang Koul was chosen as a source for HCW interviewees due to closer proximity to the Referral Hospital and other logistical reasons. TB patients were chosen regardless of their stage of treatment, and the interviewee group included all of the TB intensive phase patients giving permission to be interviewed at the Kep Referral Hospital; all of the TB continuation phase patients visiting the Kep Referral Hospital between July 7, 2003 and July 22, 2003; one TB continuation phase patient in the community chosen by proximity to the Referral Hospital, and two patients who had completed their TB

treatment regimens and had come to the Referral Hospital to pick up continuation phase medicines for family members.

All interviews, except for one, were conducted by an interviewing team consisting of the author (an English-speaking second year medical student), a Khmer interpreter, and with or without the presence of the TB project counterpart from the Operational District office. Due to logistical reasons, it was not possible to use the same interpreter for all interviews. One interview was conducted in Khmer by the counterpart from the Operational District office, with the aid of an interpreter.

Two questionnaires were developed. One was for TB inpatients (those in referral hospital) and outpatients and included questions about identifying data, TB etiology, risk factors and prevention, symptoms, treatment, natural history, and the roles of the HCW, mass media, and other sources in their understanding of TB. The second questionnaire was for HCWs in the health centre and referral hospital, and contained questions in the same categories as the above, with added detail regarding TB treatment and control policies and guidelines. The questionnaire was adapted from a focus group discussion on TB treatment adherence used in the Medecins Sans Frontieres' Aral Sea Area Program, Karakalpakstan, Uzbekistan. To ensure clarity of the questions, the questionnaire was reviewed by a Khmer interpreter, a counterpart from the Kep Referral Hospital, and an Operational District counterpart. The questionnaire was then validated with one HCW and one patient to ensure relevance, flow, and appropriateness. The questionnaires themselves are attached as Appendix A. Prior to beginning each interview, each HCW and patient were introduced to the interviewing team, explained the purpose of the interview and the goal of the study, and that all data collected would be kept anonymous and confidential within the interviewing team. Patients were told that their health care team would not know the results or identification data from their specific interviews.

Interviews with HCWs were scheduled in the morning during working hours at their respective health care institutions, with the consent of the directors of both institutions. Interviews with TB intensive phase patients were conducted in the afternoon. Interviews with TB continuation phase patients and patients who had completed their treatments took place at their convenience, when they came to the hospital to pick up medication. Most interviews were conducted in one of the various rooms at the Kep Referral Hospital. HCWs at the hospital were interviewed in a conference room, while TB intensive phase patients were interviewed at a desk outdoors. One TB continuation phase patient was interviewed at the patient's home, while the others were conducted inside one of the hospital examination rooms. The interviews for the HCWs at Ang Koul Health Centre took place during the morning of July 24, in one of the examination rooms at the Health Centre.

The issue of TB infection control precautions came up before interviewing TB patients in intensive phase. To minimize the risk of infection to the interviewing team, interviewers were provided with filtered masks when interviewing patients in the first two weeks of their treatment. In addition, all interviews with intensive phase patients were conducted outdoors at a desk to maximize ventilation, and patients were told to cover their mouths with kramas when coughing.

Focus groups. 3 focus groups were organized: one for HCWs at Ang Koul Health Centre, one for HCWs at the Kep Referral Hospital, and one for patients at the Kep Referral Hospital. All participants were interviewees except for one HCW at Ang Koul and one TB continuation phase patient at the Kep Referral Hospital. The focus group topics were: (i) feedback from the interviews, (ii) financial and transportation barriers for patients, (iii) educational and behavioural barriers for patients, (iv) barriers for the health care system, and (v) strategies to educate the public about TB. HCW participants were gathered by health care facilities' respective directors, and all TB patients present at the hospital at the time of the focus group were selected by the director of the Kep Referral Hospital TB Unit.

All focus groups were conducted by a focus group team consisting of three people: the author, a dental student interpreter from the University of Health Sciences, and recording of the session was performed by a counterpart from the Operational District. Prior to beginning each focus group discussion, the participants were introduced to the focus group team, explained the purpose of the session and the goal of the study, and that all data collected would be kept anonymous and confidential within the focus group team. Patients were told that their health care team would not know the results or identification data from their specific interviews.

The focus group for HCWs at Ang Koul Health Centre was held at the Health Centre on July 29, 2003 in the morning, as the staff usually leave the health centre at noon. The focus group for patients was held at the Kep Referral Hospital that afternoon. The focus group for HCWs at the Referral Hospital was held at the hospital on July 30, 2003 in the morning, as most staff were on duty only in the morning.

The issue of TB infection control precautions came up before conducting focus group discussions with TB patients in intensive phase. To minimize the risk of infection to the focus group team, the session was conducted outdoors to maximize ventilation.

Results and Discussion

One-on-one interviews. There were 34 interviews in total. The details are summarized below in Table 1, and translated responses for the interviews are attached as Appendix B. Interviewees are discussed below in five groups, also shown in Table 1.

Table 1 – Categorization of Interviewees

34 Interviewees						
18 HCWs				16 Patients		
6 “Group A” Stating a role in caring for TB patients		12 “Group B” Stating no role		9 “Group C” Intensive Phase	5 “Group D” Continuation phase	2 “Group E” Completed treatment
5 KRH*	1 AKHC^	8 KRH	4 AKHC			

At the Kep Referral Hospital

^ At the Ang Koul Health Centre

What is TB? How do people get TB?

All HCWs expressed knowledge that TB was an infectious disease spread from person to person. Two of the participants in Group A and one in Group B identified the etiologic agent as the Bacille de Koch (BK) bacterium. Three HCWs identified sputum as the infectious agent directly or indirectly (e.g. spread by coughing or sneezing). One in Group A and three in Group B talked about “eating,” either with TB patients or eating food contaminated by TB patients, as a cause of TB. Many participants detailed risk factors like poor health and poverty as responses to the first two questions of the survey.

Five of nine Group C, three of five Group D, and one of two Group E patients expressed that TB was an infectious disease spread from person to person. None expressed knowledge of an etiologic agent. Responses for an etiology included “eating” (5 patients), coughing (3), smoking (2), and hard work (3). “Bad environment,” drinking alcohol, genetic transmission, lack of sleep, and sexual transmission were also mentioned once each as an etiology.

Interpretation: In general, most HCWs expressed at least a basic knowledge of TB etiology and transmission. The only misconception revealed in HCWs was one of spreading TB by “eating contaminated food.” Approximately half of TB patients identified TB as infectious, and a number

of misconceptions were revealed regarding etiology such as, “eating” and “hard work.” More basic education on both etiology and transmission would be helpful for both HCWs and patients.

What risk factors make a person more likely to get TB?

HCWs in Group A, as expected, gave more detailed responses and listed more risk factors than Group B, including very young or very old age and poor access to health care. However, patients in Groups C, D, and E expressed a lower understanding of predisposing risk factors for TB infection. Three patients in Groups C and E had the misconception that “hard work” caused them to be more likely to get TB. One patient in Group C associated the risk of getting TB with an unsanitary environment with “lots of rubbish.” The most common risk factor mentioned among patients was “poor health,” meaning poor baseline health. Please refer to table 2.

Table 2 – Frequency of risk factors mentioned

Risk factors	A	B	C	D	E
Alcohol				1	1
hard work			1		2
infectious contacts	2	1	1		
malnutrition	1	2	2		
Old or young age	2				
poor education	3	3			
poor HC access	1				
poor health	2	5	2	1	1
poor hygiene	2	2	1		
poor ventilation			1		
poverty	2	2			
Smoking				1	
unsanitary environment		2	1		
Total patients	6	12	9	5	2

Interpretation: Group A members showed some knowledge of TB risk factors, as was appropriate. Again, however, patients had many misconceptions about risk factors. Education about risk factors would thus be helpful to this population.

What are the symptoms of TB?

The most common symptoms mentioned by HCWs were cough (17 times out of 18 people), fever (11), weight loss (7), hemoptysis (5), and night sweats (3). Group A gave, on average, slightly more responses (18 symptoms mentioned for 6 people) than Group B (33 for 12 people). The most common symptoms mentioned by patients were cough (14 mentions out of 16 people), dyspnea and fatigue (5 each), fever (4), and hemoptysis (3). Please refer to table 3.

Table 3 – Frequency of symptoms mentioned

Symptoms	A	B	C	D	E
Anorexia		1	1		

Chest pain	1	1	1		
Cough	6	11	9	5	
Dark spots on skin				1	
Difficulty sleeping		1			
Dyspnea			3	1	1
Fatigue	1	1	2	3	
Fever	5	6	2	2	
Headache	1	1			
Hemoptysis	2	3	1		2
Intestinal disease			1		
Malaise			1		
Night sweats		3			
Weight loss	2	5			
total patients	6	12	9	5	2

Interpretation: The cardinal symptoms of tuberculosis (cough, hemoptysis, fever, night sweats, anorexia, and weight loss) were identified easily by HCWs. However, besides cough and fever, most of these symptoms were seldomly mentioned by patients. Such is important for recognizing when oneself should suspect TB infection and seek medical attention.

Is it possible to cure TB? [If yes] How can it be cured? [If no] What are the goals of treating TB?

All participants except for 2 HCWs in Group B responded “yes.” As answers to the follow-up question, most responses had to do with taking medication, staying the course of treatment, following guidelines such as “DOT,” and resting. One HCW responding “no” justified it by saying, “poor people don’t have enough food to eat [to get better],” while the HCW was not able to justify his/her response. Please refer to table 4.

Table 4 – Rates of belief in a cure for TB

Possible to cure	A	B	C	D	E
Yes	6	10	9	5	2
No	0	2	0	0	0
total patients	6	12	9	5	2

Interpretation: The vast majority of participants believe TB can be cured. This is good in terms of effectiveness of treatment – HCWs are more likely to be motivated if the treatment is shown to be effective, and patients are more likely to adhere to treatment if they know that it may be effective.

Who observes the treatment of TB?

All respondents responded nearly uniformly, “the physician.” However, there was some variation in detail the responses. For example, nearly all health care workers stated the name of the only physician at the KRH TB Unit, while many patients stated physicians in general.

Interpretation: Physicians are highly respected by TB patients. Thus, they are good candidates for implementing any intervention for TB.

When and for how long do patients take these medicines?

Respondents in Group A had a widely varying recollection of medications used to treat TB according to the DOTS protocol. Surprisingly, 5 of 12 respondents in Group B displayed good knowledge the medications' names, as well as some deeper knowledge into their use, e.g. streptomycin is the only one of the five that is administered parenterally. Patients in Groups C, D, and E hardly could not name their medications. Please refer to table 5.

Table 5 – Number of medications recalled

Medications named	A	B	C	D	E
0	1	5	8	5	2
1	1		1		
2	1				
3	1				
4		2			
5	2	5			
total patients	6	12	9	5	2

Interpretation: HCWs who treat TB are on average somewhat familiar with the medications, while some HCWs who do not treat TB also know about the medications. This implies that it is likely that some HCWs who do not treat TB still know something about it, and thus could be candidates for implementing any community intervention in the future. Patients in general are not familiar with their medications' names despite daily exposure to them. This implies that they feel this knowledge is not important.

When and for how long do people take these medicines?

As expected, the most knowledgeable participants were in Group A (HCWs with stated role in treating TB) and patients, who had undergone the regimen or were in the process of doing so. Also expectedly, Group B (HCWs with no stated role in treating TB) was less knowledgeable of the regimen than Group A. Please refer to table 6.

Table 6 – Knowledge of TB medication regimen

Time	A	B	C	D	E
Don't know		1			
Early morning only	1	1	1	1	
Eight months only		1			
Early morning for eight months	5	9	8	4	2
total patients	6	12	9	5	2

Interpretation: The majority of HCWs and patients are familiar with the regimen for TB medications. This is possibly because TB treatment is one of the main treatments consistently performed on a daily basis at KRH.

What different treatment categories do you use for patients?

This question only applied to HCWs and was thus only asked to Groups A and B. 2 of 5 in Group A and 3 of 12 in Group B described the categories used to determine which type of treatment patients should receive. This question was misinterpreted by 3 in Group A, who described phases of treatment rather than treatment categories. Please refer to table 7.

Table 7 – Knowledge of TB treatment categories

Treatment categories	A	B
CAT1-3 system	2	3
Phases of treatment	3	
Don't know	1	9
total patients	6	12

Interpretation: The majority of HCWs did not describe the treatment categories, indicating a possible general unfamiliarity with TB treatment. Any form of continuing education to HCWs should thus include the basics of treatment stratification of TB.

What happens to patients who take the wrong medicines, patients who take the right medicines but take them incorrectly, and patients who stop taking medicines before the treatment is over?

Nearly all participants (16 of 18 HCWs and all patients) mentioned treatment failure as a consequence of non-adherence. Only HCWs, however, mentioned the concepts of antibiotic resistance (6 of 18), increased morbidity from treatment failure (1 of 18), and drug withdrawal symptoms such as fatigue, dizziness, and nausea and vomiting (1 of 18). 3 patients in group D stated that non-adherence may not have consequences if medicine is not taken regularly. Please refer to table 8.

Table 8 – Consequences of non-adherence

Non-adherence	A	B	C	D	E
Treatment failure	5	11	9	5	2
Resistance	5	1			
Morbidity	1				
Withdrawal symptoms		1			
No problems				3	
Side effects				1	
total patients	6	12	9	5	2

Interpretation: Consequences of non-adherence are generally known to HCWs but unknown to patients. Understanding concepts such as drug resistance can help a patient (especially the outpatient) to appreciate the importance of adherence. More importantly, patients especially in Group D (i.e. those treated as outpatients without DOT) must receive reinforcement of this information, as a third of these patients failed to recognize any problem in non-adherence.

As a HCW, what helped you the most to learn about TB?

This question was only posed to HCWs (Groups A and B). The main sources of TB education were through experience and seminars, conferences, and technical meetings. University education was also a source of note. Several respondents stated that, additionally to the given options, they had also learned much from personal communications with the physician at the hospital TB Unit, and reports generated by the Unit and the National TB Programme. Please refer to table 9.

Table 9 – Most significant sources of TB education

Sources of TB education	A	B
University	1	3
Continuing education		2
Scientific journals		
Seminars, conferences, and technical meetings	3	3
Community groups		
Experience	3	4
total patients	6	12

Interpretation: Seminars, conference, and technical meetings (i.e. learning from peers); and university education are important sources of TB education, especially for those without TB treatment experience.

What does the general public know about TB?

This question was only posed to HCWs (Groups A and B). In general, Group A's opinion of public knowledge of TB was lower than Group B's. 8 of 12 Group B participants stated that most or all of the public know about TB. Some Group B participants stated that the public thinks that TB is inherited, and described a social dynamic where villagers often avoid contact with families from which one member has been diagnosed with TB. Others said that knowledge was

Please refer to table 10.

Table 10 – HCW-stated level of public knowledge of TB

Public knowledge of TB	A	B
I don't know	2	
No one knows about TB		1
Few know about TB	2	1
Some do, some don't know		2
Most know about TB	1	4
Everyone knows about TB		4
total patients	6	12

Interpretation: HCWs working directly with TB patients believe the public does not know much about TB. HCWs not working with TB patients (i.e. two thirds of all HCWs interviewed) are more confident in public knowledge about TB.

What could help the general public to know more about TB?

This question was only posed to HCWs (Groups A and B).

In Group A, “direct education” (i.e. person-to-person learning) was generally seen as most effective. The ones whose responsibility it was to do the education was HCWs themselves as well as possibly “neighbours” (former TB patients). The information that should be given should be regarding transmission, symptoms, and treatment.

In Group B, one suggested that a “person in charge of [a media program] goes to the village, and shows a video cassette in the village.” Others endorsed methods similar to Group A’s suggestions, regarding “direct education,” “education from [former] patients to their neighbours” Four respondents suggested that “[HCWs] should educate people who think that TB is inherited, and explain to people that TB is caused by talking to people or coughing.” One respondent suggested that “only the MOH can do something,” indicating the need for ministerial collaboration at the national level.

Interpretation: Many HCWs believe that HCWs or previous TB patients could play a greater role in educating the public about TB.

Is it important for patients to know how people get TB? Why or why not?

Group A thought that this was important, listing potential consequences of ignorance such as contraction of TB, late seeking of treatment, and transmission to family members. Group B thought the same, and gave similar answers, although most respondents from this group stressed the necessity of preventing transmission of TB to others.

Group C generally agreed, although some misunderstood the question and told us various ways to prevent the spread of TB. Most answers centred around preventing spread to others, particularly to children. One responded that transmission information is only important to those who do not have the disease already. 3 of 5 participants in Group D demonstrated little insight into the meaning of the question, while the other 2 related the importance to financial concerns with receiving TB treatment, as well as transmission to children. One in Group E thought it was important for prevention of spread to children, whereas the other thought the information was not important because, “we don’t know the cause of getting TB.”

Interpretation: HCWs and Group C generally think route of transmission information is important for preventing transmission to others. Most patients outside of Group C could not articulate why it was important, but knew that it was important. This could possibly indicate a general ambivalence of such knowledge as patients become less symptomatic with TB.

Is it important for patients to know the symptoms of TB? Why or why not?

Group A thought the information was important for seeking early treatment for TB and preventing the spread of TB to others. Group B thought the same, for the same reasons as well as two additional ones: so that one can warn others who display symptoms to go to the hospital, and so that one can monitor his or her own course of disease.

Group C gave fewer coherent justifications (4 of 9), but all but 2 agreed that it is important information. 3 of 5 Group D thought it was important information, but only 2 of these 3 patients had coherent justifications. 2 of 2 respondents in Group E thought it was important information and could justify their responses.

Interpretation: HCWs generally understand that it is important for their patients to know about TB symptoms. Patients believe it is important but have trouble articulating their reasons for this belief.

Is it important for patients to know how TB is treated? Why or why not?

5 of 6 in Group A thought this was important. The most comprehensive justification was, "If they don't know how TB is treated, the patients will not follow the treatment. The patient won't know how to use the medicine." Several individuals in Group B recommended that patients shouldn't have to know the names of the medications; just know when to take them. One said patients "needn't know it" because the patient "has no capacity to cure him- or her-self; they just follow the doctor's advice." Another said, "We should give people knowledge about the treatment because then people can respect the doctor's orders."

6 of 9 in Group C thought this knowledge was important, with the other three either declining to answer or misunderstanding the question. One in this group stated notably that, "It's important because this knowledge will help us follow the treatment in hospital." All 5 in Group D thought it was important, giving slightly less insightful justifications. Also, 1 of 2 in Group E responded "yes."

Interpretation: Not all HCWs agree that patients should have TB treatment knowledge. This may lead to withholding the information from patients who would normally want to know it, as evidenced by this survey – most patients thought the information was important. Such knowledge could help a patient better adhere to the treatment, especially as an outpatient.

About what do you educate your TB patients?

This question was only posed to HCWs (Group A).

- length of treatment
- length of hospital stay
- one cough [from an infectious person] releases several thousands of bacteria
- how to prevent spread (cover mouth with mask or hand when talking, coughing)
- after two weeks [treatment] in hospital the disease cannot be spread to other people
- drug side effects
- treatment regimen
- eat more, do not diet
- TB is curable

Interpretation: HCWs educate their patients in a wide range of topics, including mode of transmission and treatment.

What do you think would help educate patients about TB?

This question was only posed to HCWs (Groups A and B).

Group A responses included:

- all physicians and [hospital] staff should do the educating
- the TB Unit at the KRH should do the educating
- advise the patient when they come to pick up medicines [for TB]
- posters, TV commercials, radio commercials
- educate patients to tell others about TB
- educate old patients to teach new patients
- educate patients to send others with TB symptoms to hospital
- Operational District office should provide TB news to people
- the Ministry of Health should give out advice

Group B responses included:

- don't feel hopeless
- TB is not hereditary
- adherence
- advice on good hygiene
- notify HCW of side effects of the medicine

Interpretation: HCWs suggest many means of educating patients about TB, including popular media, posters, and direct education via formed patients.

Before you were diagnosed with TB, what did you know about it?

This question was only posed to patients (Groups C, D, and E).

Group C responses included:

- "nothing" (6 of 9)
- feared the disease
- chronic course
- inherited disease / infectious disease
- caused by cold and cough
- transmitted by coughing and speaking in front of people
- symptoms of anorexia, dyspnea, fatigue

Group D responses included:

- "I don't know" (4 of 5)
- symptoms of pain, cough, tiredness

Group E responses included:

- "I didn't know anything" (2 of 2)
- I knew that TB is an inherited disease

Interpretation: Most patients knew nothing of TB before they were diagnosed and treatment began. This implies that TB education to the general population may need some improvement.

What helped you the most to learn about TB?

Since the vast majority of patients responded that they lacked knowledge of TB before commencement of treatment, only 1 patient answered this question – "Education by the HCWs here."

What could help the general public to know more about TB?

This question was only posed to patients (Groups C, D, and E).

Group C responses included:

- invite people to hospital for education
- community groups could go to the villages
- have people go to villages to educate

Group D responses included:

- radio [advertisements] and posters from the MOH
- HCWs visit households in the community to educate
- community members educate their own communities
- village chief arranges a meeting for education

Group E responses included:

- political party visits villages to educate

Interpretation: Direct person-to-person education was the most popular idea for educating the public about TB.

After you were diagnosed, what did you do to know more about TB?

This question was only posed to patients (Groups C, D, and E).

Group C responses included:

- nothing / don't know (7 of 9)
- asking the others [patients] about TB
- was told of TB by the HCW

Group D responses included:

- nothing / don't know (3 of 5)
- learned how to use medicines
- was told of TB by the HCW

Group E responses included

- nothing (2 of 2)

Interpretation: Most patients do not take initiative to learn more about their disease after diagnosis, and many mentioned they relied on the HCW for education without actively seeking it. This implies that patients are possibly not motivated to learn about their condition.

What do you think would help to educate patients in general about TB?

This question was only posed to patients (Groups C, D, and E).

Group C responses included:

- the physician should educate about TB
- the HCWs should educate patients to eat more
- TB patients can only educate within their own families
- patients can educate others after they are treated

Group D responses included:

- local HCWs should be entirely responsible for education
- have TB patients who have gotten better tell others

Group E responses included:

- the physician should educate the cured TB patients, and the cured TB patients should pass news about TB to the other people
- the physician should educate the public directly

Interpretation: Most patients believe HCWs should be responsible for educating the patient population about TB.

Focus group discussions. There were 3 focus groups in total. Topics for focus groups were chosen after all the on-on-one interviews had been completed, and were based on the main issues borne out of interviews. The topics were: (i) feedback from interviews, (ii) financial and transportation barriers for patients, (iii) educational and behavioural barriers for patients, (iv) barriers for the health care system (only discussed among HCWs), and (v) strategy for educating people about TB. Notes transcribed from all discussions are attached as Appendix C.

Feedback from Interviews

HCWs thought that interviews were useful for making them aware of their knowledge deficits regarding TB symptoms. It "makes us want to know more about TB." However, much of the knowledge questions were seen as too difficult and inappropriate for HCWs not involved with TB patient care. For patients, the interview was seen not as a constructive research tool, but as a didactic tool for the large gaps they felt they had in their knowledge, and "reminding" them about TB.

Financial and Transportation Barriers for Patients

HCWs mentioned several barriers that could prevent patients from receiving TB treatment. They included (i) cost transporting patients from health centre to referral hospital, (ii) difficulty in physically transporting patients long distances, (iii) loss of income in receiving inpatient treatment for 2 months, (iv) lack of income to purchase food during treatment in hospital. Patients were most concerned about food issues – that they had no money to buy food during their inpatient treatment, and that this would prevent them from getting better.

Educational and Behavioural Barriers for Patients

HCWs at AKHC revealed that the Operational District already has a program in place whereby a HCW is sent to the villages to educate people on communicable diseases. The community is taught that a cough of over 21 days should be sent to the referral hospital, and that it is an infectious disease. However, according to the HCWs, some patients “don’t admit they have TB,” or “get angry” when told they have TB based on grounds that theirs is not a “TB family,” and when they do receive treatment, they give up their treatment in continuation phase, leading to poor outcomes. HCWs at the KRH, on the other hand, believe that there is no such Operational District program being implemented (or that it is being implemented poorly because of lack of human resources), and that the large uneducated community in Kep is resistant and indifferent to TB issues.

The patient focus group knew that TB was an infectious disease. However, they also expressed that this wasn’t true for people without TB – “most patients know about TB when they stay in the hospital, or find out through the radio.” Patients also reaffirmed that they had never heard of an Operational District Program visiting the villages to educate about TB.

Barriers for the Health Care System

HCWs expressed that some health centres (not AKHC) have the capacity for treating TB. This was important to them because patients prefer to be treated at health centres for transportation reasons. However, the root of the problem was identified as financial – many health centres can only refer TB patients because they lacked NGO support, and lacked the budget for educators and incentives for participants.

Strategy for educating people about TB

The consensus was for “constant direct education.” Candidates for education can be one or more of HCWs, former TB patients, former village chiefs, and Tachi (men who manage weekly activities at pagodas). HCW can train non-HCWs as “village health volunteers” for reporting TB and regular education. To do this, however, HCWs must first be educated themselves. Suggestions were also given as to the specific material that should be taught – this included (i) presenting TB as a nondescript “chronic lung disease” because it is so stigmatized by the public, (ii) educating about TB symptoms and where to go for treatment.

Summary and Conclusions

HCWs in Kep know about basic TB etiology and transmission, symptoms of TB, TB medications, the common TB treatment regimen, and consequences of patient non-adherence. Not many HCWs know about treatment categories. TB patients in Kep know that TB can be cured with treatment, and most know about their own treatment regimen. However, they do not know about basic TB etiology and transmission, risk factors, cardinal symptoms beyond cough and fever, names of their medications, consequences of non-adherence beyond treatment failure, and in general patients state that they did not know anything about TB before they were diagnosed and treatment was initiated.

HCWs believed that seminars, conference, and technical meetings (i.e. learning from peers); and university education are important sources of TB education; disagree on whether the public knows basic information about TB; that HCWs or previous TB patients could play a greater role in educating the public about TB; that knowledge of route of transmission is important for preventing transmission to others; that it is important for their patients to know about TB symptoms; and that direct person-to-person education is a good way to educate the public about TB. Patients believed that knowledge about TB transmission routes and symptoms is important and that HCWs, notably the physician, should be responsible for educating the patient population about TB

Currently, HCWs attempt to educate their patients in a wide range of topics, including mode of transmission, expected treatment outcomes and treatment regimen. However, patients tend to take a passive role, not taking initiative to learn more about their disease after diagnosis, and many mentioned they relied on the HCW for education without actively seeking it. This report thus suggests that a patient education program be established, which not only informs patients on clinical facts about TB, but also explains the importance of having this knowledge. Through focus groups, a strategy for TB education was better described, along with a discussion identifying obstacles to receiving TB treatment. This report describes the baseline situation of TB knowledge, attitudes, and practices that currently exists in Kep, as well as some preliminary discussion of interventions that will ultimately decrease the incidence of this common disease. Future work should be directed at planning an implementation of these strategies with HCWs at the local, commune, provincial, and national (MOH) level.

